

11-29-05

COFC

**BARNES & THORNBURG LLP**



One North Wacker  
Suite 4400  
Chicago, Illinois 60606  
(312) 357-1313  
(312) 759-5646 Fax

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Group:

Confirmation No.:

Application No.: 09/844,705

Invention: METHODS TO IDENTIFY SWINE  
GENETICALLY RESISTANT TO  
F.18 E.COLI ASSOCIATED  
DISEASES

Applicant: Bosworth et al.

Filed: April 27, 2001

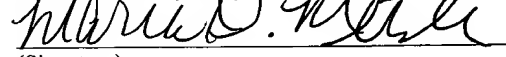
Attorney

Docket: 21419-91512

Examiner:

Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as Express Mail No. EV695556781 US in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on November 28, 2005, 2005.

  
(Signature)

Maria D. Meister  
(Printed Name)

**Certificate  
NOV 30 2005  
of Correction**

**REQUEST FOR CERTIFICATE OF CORRECTION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Please issue a Certificate of Correction for **U.S. Pat. No. 6,965,022**, based on the above-referenced application, to correct the errors listed on the accompanying PTO Form SB44. This request is being made pursuant to 35 U.S.C. § 254, because the error relates to an omission on behalf of the U.S. PTO.

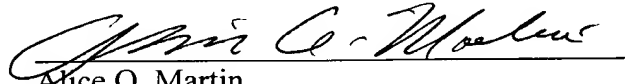
Copies of the Assignments are also enclosed.

NOV 30 2005

No fees are believed due at this time, however, please charge any deficiencies or credit any overpayments to deposit account number 12-0913 with reference to our attorney docket number (21419-91512).

Respectfully submitted,

BARNES & THORNBURG LLP



Alice O. Martin  
Attorney Registration No. 35,601

November 28, 2005

Barnes & Thornburg  
P.O. Box 2786  
Chicago, Illinois 60690-2786  
November 28, 2005

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,965,022 B2

Page 1 of 1

APPLICATION NO. : 09/844,705

ISSUE DATE : November 15, 2005

INVENTOR(S) : Bosworth et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Please amend the Patent Application to add an assignee which was omitted from the Patent, a PTO error:

The United States of America as Represented by the Secretary of Agriculture, Washington, D.C.;

Biotechnology Research and Development Corp., 1815 N. University, Peoria, IL 61604;

Swiss Federal Institute of Technology, Ramistrasse 101, ETH-Zentrum, CH-8092 Zurich Switzerland

MAILING ADDRESS OF SENDER (Please do not use customer number

Alice O. Martin, Registration No. 35,601

Barnes & Thornburg LLP

One North Wacker Dr., Suite 4400, Chicago, IL 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 30 2005

## PART 3 - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: MailMail Stop, ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

or Fax (703) 746-4000

NOV 28 2005

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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01/06/2005

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P.O. BOX 2786  
CHICAGO, IL 60690-2786

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first-class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

ALICE O. MARTIN (Depositor's name)  
Alice O. Martin (Signature)  
2/8/05 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,705	07/26/2001	Brad T. Bosworth	21419/91512	2430

TITLE OF INVENTION: METHODS TO IDENTIFY SWINE GENETICALLY RESISTANT TO F18 E. COLI ASSOCIATED DISEASES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	04/06/2005
EXAMINER	ART UNIT	CLASS-SUBCLASS			
WOITACH, JOSEPH T	1632	536-023500			

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Barnes &amp; Thornburg

2 Alice O. Martin

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

The United States of America as Represented by the Secretary of Agriculture, Washington, D.C.  
Biotechnology Research and Development Corp., 1815 N. University, Peoria, IL 61604  
Swiss Federal Institute of Technology, Ramistrasse 101, ETH-Zentrum, CH-8092 Zurich Switzerland

20250

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

☒ Issue Fee☒ Publication Fee (No small entity discount permitted)☒ Advance Order - # of Copies 10

4b. Payment of Fee(s):

☒ A check in the amount of the fee(s) is enclosed.☐ Payment by credit card. Form PTO-2038 is attached.☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 12-0913 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

Alice O. Martin

Date February 8, 2005

Typed or printed name

Alice O. Martin

Registration No. 35,601

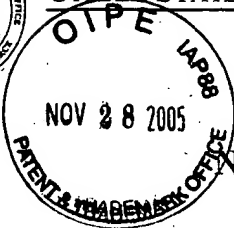
This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

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01/06/2005

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P.O. BOX 2786  
CHICAGO, IL 60690-2786

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JAN 10 2005

BARNES &amp; THORNBURG

EXAMINER

WOITACH, JOSEPH T

ART UNIT

PAPER NUMBER

1632

DATE MAILED: 01/06/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/844,705

07/26/2001

Brad T. Bosworth

21419/91512

2430

TITLE OF INVENTION: METHODS TO IDENTIFY SWINE GENETICALLY RESISTANT TO F18 E. COLI ASSOCIATED DISEASES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional

NO

\$1400

\$300

\$1700

04/06/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

## HOW TO REPLY TO THIS NOTICE:

## I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

DOCKETED FOR: N/A

Due Date: 01/16/05

Final Date: 01/16/05

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## PART B - FEE(S) TRANSMITTAL

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01/06/2005

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/844,705

-07/26/2001

Brad T. Bosworth

21419/91512

2430

TITLE OF INVENTION: METHODS TO IDENTIFY SWINE GENETICALLY RESISTANT TO F18 E. COLI ASSOCIATED DISEASES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional

NO

\$1400

\$300

\$1700

04/06/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
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WOITACH, JOSEPH T

1632

536-023500

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

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☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

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(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1	_____
2	_____
3	_____

## 3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

## 4a. The following fee(s) are enclosed:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

## 4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

## 5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.  
 NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

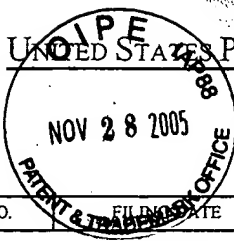
This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,705	07/26/2001	Brad T. Bosworth	21419/91512	2430

23644 7590 01/06/2005

BARNES & THORNBURG  
P.O. BOX 2786  
CHICAGO, IL 60690-2786

EXAMINER

WOITACH, JOSEPH T

ART UNIT PAPER NUMBER

1632

DATE MAILED: 01/06/2005

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 450 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 450 day(s).

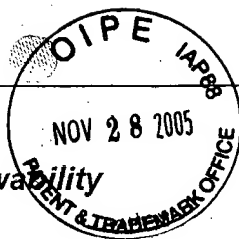
If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

NOV 30 2005

# Notice of Allowability



Application No.	Applicant(s)	
09/844,705	BOSWORTH ET AL.	
Examiner	Art Unit	
Joseph T. Weitach	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/23/2004.
2. ☒ The allowed claim(s) is/are 3,5 and 6.
3. ☒ The drawings filed on 27 April 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____. | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material           | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |



Art Unit: 1632

### DETAILED ACTION

This application filed April 27, 2001 is a continuation of 09/443,766 filed November 19, 1999, now US Patent 6,596,923 (issued July 22, 2003) which claims benefit under 35 U.S.C. 120 to PCT/US98/10318, filed May 20, 1998, which claims benefit to provisional application 60/047,181, filed May 20, 1997.

Applicants' after final amendment filed September 23, 2004, has been received and entered. Claims 1, 2 and 4 have been canceled. Claims 3 and 5 have been amended. Claims 3, 5 and 6 are pending and currently under examination.

### *Reasons for Allowance*

The following is an examiner's statement of reasons for allowance:

The terminal disclaimer filed June 23, 2004, has been received and accepted. The filing of the disclaimer has obviated the obvious double patenting rejection over 6,596,923. With respect to the second double patenting rejection, Applicants' previous arguments and the amendments to the claims has sufficiently distinguished the instant claimed method of identifying and breeding swine resistant to toxigenic *E. coli* from the methods of increasing weight gain as claimed in 6,355,859.

As indicated in the previous office actions the claims are free of the art of record because while the art indicates that cell surface receptors on intestinal cells are the target molecules for *E. coli* colonization, and that the glycosylation on said receptors may be important in determining the ability of a particular *E. coli* to colonize the intestine, the art fails to specifically teach that an

Art Unit: 1632

adenine at position 307 of the open reading frame of alpha (1,2) fucosyltransferase (FUT1) (SEQ ID NO: 12) can be correlated with resistance to *E. coli* strain F18 and possibly with the subsequent associated diseases. The amendment to the claims and Applicants' arguments have been fully considered and are found sufficient to address the remaining rejections of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Woitach whose telephone number is (571) 272-0739.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached at (571) 272-0734.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group analyst Dianiece Jacobs whose telephone number is (571) 272-0532.

Joseph T. Woitach

JOSEPH WOITACH  
PATENT EXAMINER

*Joe Woitach*  
AU1632



inventor: Brad Bosworth and Peter Vögeli  
Title: METHODS TO IDENTIFY SWINE  
GENETICALLY RESISTANT TO F18 *E. COLI*  
ASSOCIATED DISEASES  
Filing Date: April 27, 2001  
Atty Docket No. 21419/91512

The following was sent to the United States Patent and  
Trademark Office

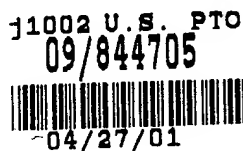
- Utility Patent Application Transmittal Form
- Specification (22 pages).
- Copy of Declaration from Patent App. No.  
09/443,776

Mailed via Express Mail on April 27, 2001

*Alice O. Martin*

Alice O. Martin  
Reg. No. 35,601

EL 576314317US



NOV 30 2005





COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/844,705	04/27/2001	1633	0.00	21419/91512		2	1

CONFIRMATION NO. 2430

## FILING RECEIPT

23644  
BARNES & THORNBURG  
2600 CHASE PLAZA  
10 LASALLE STREET  
CHICAGO, IL 60603

\*OC000000006186637\*

Date Mailed: 06/15/2001

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Brad T. Bosworth, Cambridge, UNITED KINGDOM;  
Peter Vogeli, Zurich, SWITZERLAND;

## Domestic Priority data as claimed by applicant

THIS APPLICATION IS A DIV OF 09/443,766 11/19/1999  
WHICH CLAIMS BENEFIT OF 60/047,181 05/20/1997

## Foreign Applications

PCT/US98/01318 05/20/1998

If Required, Foreign Filing License Granted 06/14/2001

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

## Title

Methods to identify swine genetically resistant to F18 E. coli associated diseases

NOV 9 0 2001  
NOV 30 2001

**Preliminary Class**

800

---

**Data entry by :** YOSEPH, LETEYESUS

**Team :** OIPE

**Date:** 06/15/2001

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Title 37, Code of Federal Regulations, 5.11 & 5.15**

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- The title may be truncated if it consists of more than 500 characters (letters and spaces combined).
- The docket number allows a maximum of 25 characters.
- If your application was submitted under 37 CFR 1.10, your filing date should be the "date in" found on the Express Mail label. If there is a discrepancy, you should submit a request for a corrected Filing Receipt along with a copy of the Express Mail label showing the "date in."
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Assistant Commissioner for Patents  
Office of Initial Patent Examination  
Customer Service Center  
Washington, DC 20231

NOV 30 2005

30 2005

**ASSIGNMENT**

WHEREAS, Brad T. Bosworth, hereinafter called the "Assignor", has made the invention described in the patent application entitled METHODS AND COMPOSITIONS TO IDENTIFY SWINE GENETICALLY RESISTANT TO F.18 E. COLI ASSOCIATED DISEASES for a full description of which reference is here made to US Utility Application 09/443,766 filed on November 19, 1999; U.S. Provisional Application 60/047,181 filed May 10, 1997 and PCT application PCT/US98/10318 filed on May 20, 1998.

WHEREAS, Biotechnology Research and Development Corporation, a corporation organized and existing under the laws of the State of Delaware, having a place of business at 1815 North University, Peoria, Illinois 61604 USA and U.S. of America as Represented by the Secretary of Agriculture, Washington D.C. 20250, USA, hereinafter called the "Co-Assignees", desires to acquire the entire right, title and interest in and to the invention and the patent application identified above, and all patents which may be obtained for said invention, as set forth below;

NOW, THEREFORE, in consideration of valuable and legally sufficient consideration, the receipt of which by the Assignor from the Co-Assignees is hereby acknowledged, the Assignor has sold, assigned, and transferred, and by these presents do sell, assign and transfer to the Co-Assignees, the entire right, title and interest for the United States in and to the invention and the patent application identified above, and any patents that may issue for said invention in the United States; together with the entire right, title and interest in and to said invention and all patent applications and patents therefor in all countries foreign to the United States, including the full right to claim for any such application all benefits and priority rights under any applicable convention; together with the entire right, title and interest and to all continuations, divisions, renewals, and extensions of any of the patent applications and patents defined above; to have and to hold for the sole and exclusive use and benefit of the Co-Assignees, its successors and assigns, to the full end of the term or terms for all such patents.

The Assignor does hereby covenant and agree, for both the Assignor and the Assignor's legal representatives, that the Assignor will assist the Co-Assignees in the prosecution of the patent application identified above; in the making and prosecution of any other patent applications that the Co-Assignees may elect to make covering the invention identified above; in vesting in the Co-Assignees like exclusive title in and to all such other patent applications and patents; and in the prosecution of any interference which may arise involving said invention, or any such patent application or patent; and that the Assignor will execute and deliver to the Co-Assignees any and all additional papers which may be requested by the Co-Assignees to carry out the terms of this Assignment.

NOV 30 2005

NOV 30 2005



For United States applications, the Assistant Commissioner of Patents and Trademarks is hereby authorized and requested to issue patents to the Co-Assignees in accordance with the terms of this Assignment. The effective date of the assignment is May 10, 1997.

IN TESTIMONY WHEREOF, the Assignor has executed this Assignment.

DATED: Feb 18, 2000

Brad T. Bosworth  
Brad T. Bosworth

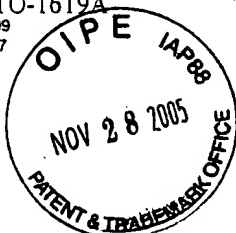
WITNESSED:

DATE: 18/2/2000

(SEAL)

Dr D.M. Ballantine  
DR D.M. BALLANTINE.  
Registered medical  
practitioner (UK)  
62 Grantchester Meadows  
Cambridge CB3 9TL.  
Signed at 'Red Bull'  
Barbar Road,  
Cambridge  
(UK).

Serial No. 09/443,766

FORM PTO-1619A  
Expires 06/30/99  
OMB 0651-0027

Certificate Under 37 CFR 1.8(a)

This correspondence is being deposited with the  
United States Postal Service as First Class Mail in  
an envelope addressed to Assistant Commissioner  
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Att'y Docket No.

21419/90368

U.S. Department of Commerce  
Patent and Trademark Office  
**PATENT****RECORDATION FORM COVER SHEET  
PATENTS ONLY**

TO: The Commissioner of Patents and Trademarks: Please record the attached original document(s) or copy(ies).

**Submission Type**☒ New☐ Resubmission (Non-Recordation)Document ID# ☐ Correction of PTO ErrorReel #  Frame # ☐ Corrective DocumentReel #  Frame # **Conveyance Type**☒ Assignment☐ Security Agreement☐ License☐ Change of Name☐ Merger☐ Other **U.S. Government**

(For Use ONLY by U.S. Government Agencies)

☐ Departmental File☐ Secret File**Conveying Party(ies)**☐ Mark if additional names of conveying parties attachedName (line 1)  Brad T. BosworthExecution Date  
Month Day Year  
 2/18/00Name (line 2) **Second Party**Name (line 1) Execution Date  
Month Day Year  
Name (line 2) **Receiving Party**☒ Mark if additional names of receiving parties attachedName (line 1)  Biotechnology Research and Development CorporationName (line 2)  1815 North UniversityAddress (line 1) Address (line 2) Address (line 3)  Peoria Illinois 61604

City

State/Country

Zip Code

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receiving party is not  
domiciled in the United  
States, an appointment  
of a domestic  
representative is attached.  
(Designation must be a  
separate document from  
Assignment.)**Domestic Representative Name and Address**

Enter for the first Receiving Party only.

Name Address (line 1) Address (line 2) Address (line 3) Address (line 4) **FOR OFFICE USE ONLY**

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Serial No. 09/443,766

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CONTINUATION  
PATENTS ONLYAtty Docket No.  
21419/90368  
U.S. Department of Commerce  
Patent and Trademark Office  
PATENT

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Execution Date  
Month Day Year

Name (line 2)

Execution Date  
Month Day Year

Name (line 1)

Name (line 2)

Execution Date  
Month Day Year

Name (line 1)

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State/Country

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## Application Number(s) or Patent Number(s)

☐ Mark if additional numbers attached

Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

Patent Application Number(s)

Patent Number(s)

NOV 30 2005

## Correspondent Name and Address

Area Code and Telephone Number 312-357-1313

Name Alice O. Martin

Address (line 1) Barnes &amp; Thornburg

Address (line 2) 2600 Chase Plaza

Address (line 3) 10 South LaSalle Street

Address (line 4) Chicago, Illinois 60603

## Pages

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## Application Number(s) or Patent Number(s)

☐ Mark if additional numbers attached

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## Patent Application Number(s)

## Patent Number(s)

09/443,766

60/047,181

If this document is being filed together with a new Patent Application, enter the date the patent application was signed by the first named executing inventor.

Month Day Year

## Patent Cooperation Treaty (PCT)

Enter PCT application number

only if a U.S. Application Number has not been assigned.

PCT US98/10318

PCT

PCT

PCT

PCT

PCT

## Number of Properties

Enter the total number of properties involved.

#

## Fee Amount

Fee Amount for Properties Listed (37 CFR 3.41): \$ 40.00

Method of Payment:

Deposit Account

Enclosed ☒Deposit Account ☐

(Enter for payment by deposit account or if additional fees can be charged to the account.)

Deposit Account Number:

# 10-0435

Authorization to charge additional fees:

Yes

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No

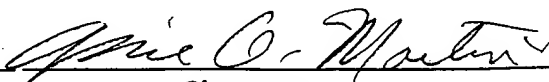
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Alice O. Martin

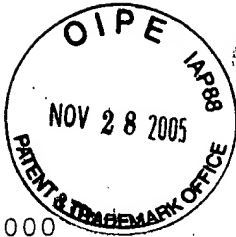
Name of Person Signing



Signature

February 22, 2000

Date



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

ASSISTANT SECRETARY AND COMMISSIONER  
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Washington, D.C. 20231

MAY 23, 2000

BARNES & THORNBURG  
ALICE O. MARTIN  
2600 CHASE PLAZA  
10 SOUTH LASALLE STREET  
CHICAGO, IL 60603

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\*101303896A\*

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RECORDATION DATE: 02/24/2000

REEL/FRAME: 010645/0780  
NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

VOGELI, PETER

DOC DATE: 01/25/2000

ASSIGNEE:

SWISS FEDERAL INSTITUTE OF  
TECHNOLOGY  
RAMISTRASSE 101  
ETH-ZENTRUM CH-8092  
ZURICH, SWITZERLAND

SERIAL NUMBER: 09443766  
PATENT NUMBER:

FILING DATE: 11/19/1999  
ISSUE DATE:

SERIAL NUMBER: 60047181  
PATENT NUMBER:

FILING DATE: 05/20/1997  
ISSUE DATE:

SERIAL NUMBER:  
PATENT NUMBER:  
PCT NUMBER: US9810318

FILING DATE:  
ISSUE DATE:

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010645/0780 PAGE 2

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ASSIGNMENT DIVISION  
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(\$30) OR FRACTION THEREOF	
UNSPECIFIED OTHER SERVICES	585

NOV 30 2003



Serial No. 09/443,766

Att'y Docket No. 21419/90368

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**PATENT**

04-04-2000

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EET

TO: The Commissioner of Patents and T

**Submission Type**

101303896

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☒ Assignment

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☐ Other

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Name (line 1) Peter Vögeli

Execution Date  
Month Day Year  
1/25/00

Name (line 2)

**Second Party**

Name (line 1)

Execution Date  
Month Day Year

Name (line 2)

**Receiving Party**

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Name (line 1) Swiss Federal Institute of Technology

Name (line 2) Ramistrasse 101

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Address (line 2) CH-8092 Zurich Switzerland

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Serial No. 09/443,766

Atty Docket No. 31419/90368

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Expires 06/30/99  
OMB 0651-0027

Page 2

U.S. Department of Commerce  
Patent and Trademark Office  
PATENT

## Correspondent Name and Address

Area Code and Telephone Number 312-357-1313

Name Alice O. Martin

Address (line 1) Barnes &amp; Thornburg

Address (line 2) 2600 Chase Plaza

Address (line 3) 10 South LaSalle Street

Address (line 4) Chicago, Illinois 60603

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## Application Number(s) or Patent Number(s)

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09/443,766

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has not been assigned.

PCT US98/10318

PCT

PCT

PCT

PCT

PCT

## Number of Properties

Enter the total number of properties involved.

#

## Fee Amount

Fee Amount for Properties Listed (37 CFR 3.41): \$ 40.00

Method of Payment:

Deposit Account

Enclosed ☒Deposit Account ☐

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# 10-0435

Authorization to charge additional fees:

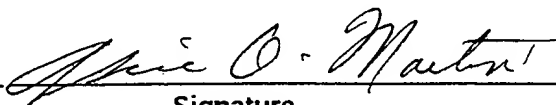
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indicated herein.

Alice O. Martin

Name of Person Signing



Signature

February 22, 2000

Date

NOV 30 2000

## ASSIGNMENT

WHEREAS, Peter Vögeli, hereinafter called the "Assignor", has made the invention described in the patent application entitled METHODS AND COMPOSITIONS TO IDENTIFY SWINE GENETICALLY RESISTANT TO F.18 E. COLI ASSOCIATED DISEASES for a full description of which reference is here made to US Utility Application 09/443,766 filed on November 19, 1999; U.S. Provisional Application 60/047,181 filed May 10, 1997 and PCT application PCT/US98/10318 filed on May 20, 1998.

WHEREAS, Swiss Federal Institute of Technology, Ramistrasse 101, ETH-Zentrum, CH-8092 Zurich, Switzerland, hereinafter called the "Assignee", desires to acquire the entire right, title and interest in and to the invention and the patent application identified above, and all patents which may be obtained for said invention, as set forth below;

NOW, THEREFORE, in consideration of valuable and legally sufficient consideration, the receipt of which by the Assignor from the Assignee is hereby acknowledged, the Assignor has sold, assigned, and transferred, and by these presents do sell, assign and transfer to the Assignee, the entire right, title and interest for the United States in and to the invention and the patent application identified above, and any patents that may issue for said invention in the United States; together with the entire right, title and interest in and to said invention and all patent applications and patents therefor in all countries foreign to the United States, including the full right to claim for any such application all benefits and priority rights under any applicable convention; together with the entire right, title and interest and to all continuations, divisions, renewals, and extensions of any of the patent applications and patents defined above; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term or terms for all such patents.

The Assignor does hereby covenant and agree, for both the Assignor and the Assignor's legal representatives, that the Assignor will assist the Assignee in the prosecution of the patent application identified above; in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; in vesting in the Assignee like exclusive title in and to all such other patent applications and patents; and in the prosecution of any interference which may arise involving said invention, or any such patent application or patent; and that the Assignor will execute and deliver to the Assignee any and all additional papers which may be requested by the Assignee to carry out the terms of this Assignment.

NOV 30 2006

20 2006

Atty Docket No. 21419/90368

Serial No. 09/443,766

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DATED: January 25, 2000

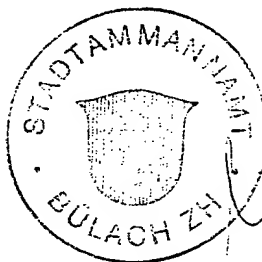
P. Vögeli  
Peter Vögeli

WITNESSED:

DATE: \_\_\_\_\_

(SEAL)

Beglaubigung siehe Beiblatt !  
(Nr. 462)



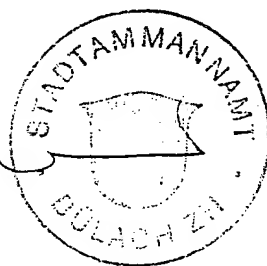

## Amtliche Beglaubigung

Die Echtheit der vorstehenden, in meiner Gegenwart vollzogenen Unterschrift  
des durch Vorlegung des Passes sich ausweisenden  
Herr **Dr. Peter Vögeli**, geb. 04.08.1948, von Fehraltorf ZH und Herbligen BE,  
wohnhaft Adamengässchen 12, 8180 Bülach,  
wird hiermit amtlich bezeugt.

8180 Bülach, 25. Januar 2000

## Stadtammannamt Bülach

Der Stadtammann:



Begl.Nr. 462

Gebühr: Fr. 20.--